STATE LEVEL

New science diploma requirements for labs

Include more math/diploma Alg 1 or higher requirements

Science standards: inch wide and mile deep

DISTRICT LEVEL

Literacy focus

Science alignment? (Eric)

SCHOOL LEVEL

Sustainability

Place Based

Project Based

STUDENT SKILLS

Science/Math/Language Arts/21st Century/Social Studies/Technology

Science

1. Citizen scientist – gather data (reproducible, replicate)

Vernier Probes

Hach

* 1. pH
  2. Conductivity
  3. Temperature
  4. DO
  5. Opt: Phosphates, nitrates, TSS

Publish for CFWWC

1. Identify macros

Camera

1. Identify plants
2. Successions
   1. Stream braiding
   2. Eutrophication
   3. Forests
3. Research ?

Math

1. Graphing and linear regression

Tech: use excel summation to calculate consumption🡪online tool

* 1. USGS water flow data
  2. Water Quality Data
  3. Glaciers over time

1. Consumption
   1. Predict future
   2. Conserve/preserve
2. Probability
   1. Floodplain & 100 year flood (insurance = life skill)

Social Studies

Video of speaker

1. Water Rights/Law
   1. speaker

GPS

ArcGIS Arc Online

1. Urban Growth Boundary – Wetlands
2. EPA Superfund –Black Butte
3. Watershed Topography/GIS

Language Arts

1. Reading
   1. CCRs for multiple cities
   2. TMDL testing papers
2. Writing
   1. Brochure or poster about water conservation
3. Speaking

Housekeeping: set up file folders and login page.

Pre-assessment: begin Seeing Reason map.

How does the water get here?

Future adaption: include snowpack and glacier issues; connect glaciers and global warming

Water cycle

1. simulate acid rain by carving chalk, then pour vinegar on it
2. build water cycle model from stream notebook

Watershed/topography



1. tributaries NSTA activity/document with camera (sub basins)
2. extension: gradient 🡪 erosion; flow (kids figure out how to build a model for classroom)
3. extension: Are our wetlands growing or diminishing? Can we repair wetland/riparian areas?

How much water do we use?

Use internet calculators for water usage, then measure on camping trip.

|  |  |  |
| --- | --- | --- |
| 1. Urban | CG Public Works  Sentinel |  |
| 1. Rural | Wells | OWRD |
| 1. Population | CG and County |  |

Oregon Water Resources Department 1) interactive mapping tool <http://gis.wrd.state.or.us/apps/map/owrd_map/Default.aspx> and 2) well log



Covers surface and ground water, levels, GIS layers for water rights etc

Speaker on water rights

What % of families in CFW watershed use wells?

Population growth?

Extension: what is our water used for?

Is our water safe?



1. Do water filter lab for exploration
2. Water Quality Index
   1. pH
   2. temperature
   3. conductivity
   4. DO
   5. Opt: phosphates, nitrates ext:TSS
3. CCR for CG
4. Macros (later connection to Salmon; Riverweb)
5. Extension: improve CCR content and graphics
6. Extension: Does the CFW have a TMDL?

European Impact

1. Dams 🡪 US Corp Eng



* 1. Dorena 🡪 Hydropower
  2. Cottage Grove Lake
  3. Extension: calculate zones if dams break (like global warming on coast)

1. Floodplain🡪 FEMA maps, real estate
2. Contamination – Black Butte EPA Superfund site
3. Salmon habitat loss
   1. Riparian
      1. Invasive plants
      2. Native plants

<http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>

Will we have enough water? How do you know? How do we compare to other Oregon towns?